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Professional Summary

Senior Systems Engineer with 5+ years of experience engineering high-performance automation for complex 5G/6G testbeds. I specialize in the architectural transition from manual network testing to **autonomous, self-optimizing environments** using **Python, Agentic AI, and Cloud-Native (K8s/Docker)** stacks. My work centers on building the "internal infrastructure" that solves deep-domain signaling bottlenecks exemplified by my development of **NFTRACE** (REST-based tracing) and **intelligent remediation engines** that achieved 70% auto-resolution of failures. By blending **FastAPI, Redis, and LangChain**, I bridge the gap between low-level protocol analysis and high-level delivery, consistently reducing MTTR by 55% and optimizing pipeline efficiency by 50%.

CORE COMPETENCIES

Programming & Scripting Languages:

- SQL(MySQL, SQL Server),
- Python,
- Node.js,
- Robot Framework,
- GraphQL

Others

- Figma,
- Git, GitLab, JIRA.

Agentic Ai, Backend & Systems Architecture:

- LangChain
- REST, Fast API, XML-RPG.
- Celery (Task queues),
- Multiprocessing, Async processing.
- Redis (session management and filter caching)
- SQLite
- Streamlit

DevOps & Infrastructure:

- **ELK Stack** (Elasticsearch, Logstash, Kibana) Fundamentals.
- Linux,
- Docker,
- Kubernetes
- AWS (AppSync, AppFlow, IAM),
- Google Firebase.

Work Experience - (5 years Approx)

INFINITE COMPUTER SOLUTIONS (Nokia-Ext) - Python Dev, Automation Tester
(June-2025 to Present)

Nokia In-House Tool - Agentic Ai Module For Autonomous Test Orchestration In 6g Testbeds

- Currently working on a modular agentic AI system that autonomously orchestrates end-to-end test scenarios in 5G testbeds, self-optimizing based on real-time network telemetry to handle complex multi-vendor integrations.

LOT3 CCTF TDG GERMANY - UDM/AUSF Testing 5G

- Continued the project and its activities after shifting to infinite

Nokia In-House Tool - Lightweight Pyshark Filter Library for 5G

- Developed a lightweight Python-based Pyshark filter library for automated 5G failure detection and remediation, integrating into NFTRACE workflows to address signaling errors such as authentication timeouts, handover disruptions, and congestion reduced manual analysis time from hours to seconds by curating targeted display filters and real-time monitoring for latency tracking and packet drop alerts.
- Implemented remediation engine with Redis caching for instant suggestions like configuration tweaks and retries, achieving 70% auto-resolution of routine errors without escalation and a 55% reduction in mean time to repair (MTTR); boosted core network reliability, resulting in citations in three internal audits and adoption by operations teams for daily use.
- Led root-cause analysis from logs and audits, identifying that 60% of downtime stemmed from undetected signaling faults; completed implementation in 2 weeks, including filter curation, monitoring enhancements, and API hooks for seamless NFTRACE integration, saving hundreds of hours annually in telecom operations.

Tools: Python | Pyshark | Redis (for filter caching).

NOKIA NETWORKS - Python Dev, Automation Tester **(Aug-2022 to June 2025)**

LOT3 CCTF TDG GERMANY - UDM/AUSF Testing 5G

- Executed manual functional testing for 5G Core UDM/AUSF, analyzed R&D test specifications to validate signaling flows, Diameter protocol requirements and subscriber data management scenarios in live environments.
- Collaborated with client and deployment teams to execute assigned activities within Agile sprints, ensuring the on-time completion of weekly project deliveries and alignment with production requirements.
- **Managed Kubernetes (K8s) pod health and availability** by performing regular health checks and log analysis to debug microservice behavior, ensuring stable deployment of UDM/AUSF functions.
- **Designed a service dashboard for real-time monitoring** of active Kubernetes counters and deployed services, providing the client with clear visibility into cluster health and resource utilization.
- **Facilitated daily client communication** by building detailed progress reports and providing status updates on resolved blockers, ensuring alignment with weekly Agile project deliveries.
- Managed high-pressure delivery timelines by providing dedicated technical support during non-office hours, troubleshooting blockers to maintain project velocity and meet strict deployment schedules.

TCOE - NFTRACE A REST Based Network Function Tracing Tool for Telecom Test Automation

- Architectured and implemented NFTRACE, a scalable solution for capturing, processing, and validating PCAP traces in VNF/CNF environments, supporting online, scheduled offline execution modes to optimize batch testing efficiency by up to 50% in Nokia's Continuous Delivery pipelines.
- Designed server-side components using Python, including REST APIs for trace management (start/stop/merge/delete/validate), integration with Redis for caching session data, a database for storing node configurations, execution results, enabling seamless decoupling of test scenarios and validations.
- Developed client-side integration with Test Automation Framework (TAF), incorporating session management (NTSP_SESSION_ID/TC_SESSION_ID), RPC support for multi-worker parallel processing, and GUI result display for NFTRACE and audio validations.
- Handled architecture for trace collection from network nodes/third-party servers, post-processing with filters/dissection, and scenario-based validations for protocols like SIP and Diameter, reducing validation wait times and enhancing audit readiness in 5G testbeds.

Tools & Technologies Used: Python | FastAPI | Docker | Redis | SQLlite | xmlrpc | multiprocessing | Celery | Git | Jira

Nokia In-House Tool - Self-Service Robot Keyword Generator

- Built a small internal web tool (Streamlit + FastAPI) where testers input high-level test descriptions and get ready-to-use Robot Framework keywords for common 5G procedures, reducing keyword creation time from hours to minutes for repetitive tests.
- The tool parses inputs via a custom Robot Framework parser, generates syntactically valid keywords, and outputs them in .robot format.
- Usage exploded organically to 50+ weekly generations, freeing seniors for complex scenarios like multi-vendor interoperability tests, and earning shoutouts in two sprint retrospectives for boosting productivity in our 5G core team.

Tools: Python | Streamlit | FastAPI | Robot Framework Parser.

Notable Contributions, Scripts & Automation

- Developed high level python, low level keywords & test cases in robot framework, executed and analysed and delivered to customer projects.

- Automated Network Device Configuration Backup developed a script that connects to routers/switches via SSH, fetches running configs, and saves them to a Git repo or local folder with timestamps. Reducing 80% Manual Labor
- Designed and shared standardized Python code review checklists tailored to telecom constraints (thread safety in multi-threaded packet processing, Docker best practices), which were adopted as team template and improved overall code quality scores by 25% in quarterly audits.
- Paired with regular 1:1 review sessions, supporting engineers to deliver quality code.

ABJAYON PVT LTD - Node.js Backend, AWS Developer (Jan-2022 to July-2022)

- Utilized AWS services (AppSync, AppFlow) to integrate frontend and backend functionalities, improving data retrieval efficiency by 15%.
- Developed and optimized GraphQL API queries and REST APIs using Axios and FastAPI, tested with Swagger and Postman.
- Managed IAM roles for secure resource access, enhancing compliance.

Tools & Technologies: AWS, GraphQL, Node.js, FastAPI, Swagger, Postman.

LAKSHYA SPACE - Python & Web Developer (Mar-2021 to Jan-2022)

- Mentored & supervised a team of 19 interns in web development
- Engineered code for sensors deployed in Cubesat using Python.
- Independently developed a website.

Education

- **Graduation :** Vasavi College of Engineering, Hyderabad (BE - Computer Science - 2021)

Extra Curricular Activities

- Graphic Designing for Social Awareness Activities
- Exploring and experimenting with generative adversarial networks (GANs)
- Provided mentorship & guidance to aspiring engineers, assisting with career planning and skill development.